a second encapsulating layer encapsulating the second set of components and at least partially contacting the first encapsulating layer, and

at least one functional interconnect for interconnecting at least one of the second set of components with at least one of the first set of components.

39. A method of forming a device, comprising:

forming first device, wherein forming a first device comprises

providing a first substrate,

coupling a first set of components to the first substrate,

encapsulating the first set of components with a first encapsulating layer,

removing the first substrate until interconnects are exposed,

forming at least a second device, wherein forming a second device comprises

providing a second substrate,

coupling a second set of components to the second substrate,

encapsulating the second set of components with a second encapsulating layer,

functionally interconnecting at least one component of the first set of components of the first device with at least one component of the second set of components of the second device.

40. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling an integrated circuit die.

41. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling components for wireless communication.

42. The method of claim **41**, wherein coupling components for wireless communication comprises coupling at least one of amplifiers, monolithic microwave integrated circuits, synthesizers, and vocoders.

43. The method of claim **41**, wherein coupling components for wireless communication comprises coupling at least one of gallium arsenide components and silicon components.

44. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling optical signal processors.

45. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling a sensor.

46. The method of claim **45**, further comprising detecting, by the sensor, the presence of a preselected chemical composition in the fluid sample.

47. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling a transducer.

48. The method of claim **47**, wherein coupling the transducer comprises coupling at least one of a mechanical actuator, a thermal actuator, an optical actuator, an electrical actuator, a chemical actuator, and a fluidic actuator.

49. The method of claim **48**, wherein coupling the transducer comprises coupling at least one of a motor, a piston, a relay, a microphone, a piezoelectric device, a battery, and a fuel cell.

50. The method of claim **39**, wherein at least one of coupling the first set of components and coupling the second set of components comprises coupling a passive component.

51. The method of claim **50**, wherein coupling passive components comprises coupling at least one of a resistor, an inductor, and a capacitor.

52. The method of claim **39**, further comprising fabricating a passive component within at least one of the first encapsulating layer and the second encapsulating layer.

53. The method of claim **39**, further comprising routing optical signals within the device.

54. The method of claim **39**, further comprising forming an optical waveguide within the device.

55. The method of claim **39**, further comprising guiding optical signals through the device by disposing at least one of optical filters, optical absorbers, optical reflectors, optical scatterers, optical splitters, and optical diffracters in accordance with one or more predetermined optical signal paths.

56. The method of claim **39**, further comprising incorporating nanoparticles within at least one of the first encapsulating layer and the second encapsulating layer to alter properties of a portion of the device.

57. The method of claim **56**, wherein incorporating nanoparticles comprises incorporating nanoparticles to alter at least one of the electrical conductivity, the thermal conductivity, and the mechanical properties of the portion of the device.

58. The method of claim **39**, further comprising incorporating nanoporous structures within at least one of the first encapsulating layer and the second encapsulating layer to alter properties of a portion of the device.

59. The method of claim **58**, wherein incorporating nanoporous structures comprises incorporating nanoporous structures to alter at least one of the electrical conductivity, the thermal conductivity, and the mechanical properties of the portion of the device.

60. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing a dielectric polymer material.

61. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing a thermoplastic material.

62. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing a thermoset material.

63. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing at least one of polymethyl methacrylate, polyimide, and benzocyclobutenes.

64. The method of claim **39**, further comprising removing at least a portion of at least one of the first encapsulating layer and the second encapsulating layer.

65. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing SU-8.

66. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing a material in a liquid phase.